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Key factors for successful corporate entrepreneurship: a study of Indonesian contractors

Corporate entrepreneurship (CE) is considered as an effective means to support the success of business in a competitive market. Although CE can be a solution for contractors to come up with the right corporate strategy, the concept of CE is very new and there is very little guidance. This paper is aimed at clarifying the CE concept for contractors and identifying key factors for CE in order to enable the implementation. To address this, firstly theoretical concepts and previous research on CE were explored, followed by 19 interviews with top managers of contractors in Indonesia. The data was analysed using thematic analysis to identify the key factors for successful CE in Indonesian contracting business. 21 key factors of CE have been identified, which are discussed under five categories: autonomy, competitive aggressiveness, innovativeness, proactiveness and risk taking. All these key factors are found to be related to one another and hence have to be managed as a system for successful CE.

Keywords: entrepreneurship, corporate strategy, contractors, Indonesia

Introduction

The construction industry plays a major role in driving a country's social and economic establishment (Halpin and Woodhead, 2011, Wong et al., 2010, Winch, 2010), which is more significant in rapidly developing countries such as Indonesia. The construction industry involves many different types of companies such as contractors, sub-contractors, consultants and suppliers. Among these, contractors run their activities in many unique ways. Firstly, contractors are project based firms (PBFs) that deliver a unique end product specifically designed to meet the client's needs. Secondly, they need to overcome two main challenges in order to be successful in contractors' business: 1) to beat the competition to get the project and, 2) to deliver the project successfully (Volpe and Volpe, 1991). Contractors operate in an environment of high competition, high risk, and high need for innovation (Dvir et al., 2006, Schaufelberger, 2009). They tend to apply a prudent and conventional management style in their business; however, in order to achieve long term success, contractors need to implement

the right strategic concept, which may involve novelty and innovation (Chinowsky, 2001).

Problems in the Indonesian construction industry arise due to the unpreparedness of the construction companies, especially contractors, to deal with current conditions and future prospects. According to Wirahadikusumah and Pribadi (2011), the majority of Indonesian contractors display only poor to fair performance, and only few contractors are considered excellent, delivering high standards and quality of work in their projects. Considering the specific nature and challenge of the contractor business in general coupled with the particular circumstances of construction industry in Indonesia, a strategic effort needs to be made by the contractors in order to improve their competitiveness and performance. Efforts to deal with the competitiveness might include building effective networks (Keung and Shen, 2017); forming collaborative and partnering relationships with subcontractors (Tan, Xue and Cheung, 2017); building work and bidding experience (Fu, Drew, and Lo, 2002); or corporate entrepreneurship which covers the previous efforts as well (Peltola, 2012). This study focuses on corporate entrepreneurship and its implementation in contracting companies as an effective way to deal with these challenges.

Entrepreneurship is accepted as an important driving force for business success (Covin and Slevin, 1991, Lumpkin and Dess, 1996, Wiklund and Shepherd, 2003). Entrepreneurship is associated to the process that has been carried out by an individual (entrepreneur) whilst setting up a new company (Bolton and Thomson, 2004, Brandstatter, 2011) as well as the strategic process of maintaining the existing company (Lazear, 2005, Yalcin and Kapu, 2008). The latter is referred as corporate entrepreneurship (CE), which is the focus of this study. Considering the reliability of CE in supporting the success of business and the need of Indonesian contractors to implement the right strategy to counter the high levels of competition, it is expected that CE will enable contracting businesses to achieve success.

Although there is a large amount of research on CE in business management, it is also accepted that the theoretical models and solutions are not transferrable to all business sectors (van Wyk and Adonisi, 2012). In construction research, the efforts heavily focus on entrepreneurship at the individual level (entrepreneurs) and fail to address the corporate entrepreneurship. This study focuses on this gap in construction research. Furthermore, the special characteristics of the contracting business and the specific conditions of Indonesian construction industry call for a specific CE research that reflects the business and country characteristics. To address this, firstly theoretical concepts and previous research on CE in business management and in construction industry were explored. Secondly, interviews were carried out to explore the implementation of CE in Indonesian contractors. Thirdly, the data was analysed systematically to identify the key factors for successful CE in Indonesian contracting business.

Literature review

Entrepreneurship

Past definitions associated entrepreneurship with creating new business (Yalcin and Kapu, 2008); or maintaining existing business (Jones and Butler, 1992, Lazear, 2005); or both (Hebert and Link, 1989, Sharma and Chrisman, 1999, Lumpkin and Dess, 1996, Bolton and Thompson, 2004). Characteristics attributed to the entrepreneurship process were seeking opportunity (Jones and Butler, 1992), risk (Hebert and Link, 1989), creativity (Hebert and Link, 1989, Jones and Butler, 1992, Bolton and Thompson, 2004, Brandstätter, 2011) and innovation or newness (Lumpkin and Dess, 1996, Sharma and Chrisman, 1999, Lazear, 2005, Brandstätter, 2011). These characteristics were investigated as part of the process that has been carried out by an individual, entrepreneur (Hebert and Link, 1989, Sharma and Chrisman, 1999, Bolton and Thompson, 2004, Brandstätter, 2011) as well as the process

within a company referred as corporate entrepreneurship (Jones and Butler, 1992, Lumpkin and Dess, 1996, Lazear, 2005, Yalcin and Kapu, 2008).

This study considers entrepreneurship as a process of an individual creating and / or running a business as well as the process within the company of attempting to gain new business and / or to manage the existing business with the aim to achieve business success that involves several specific characteristics, such as seeking opportunity, risk taking, creativity, and innovation.

Corporate Entrepreneurship

CE is defined as an entrepreneurial activity or process within an existing organization to upgrade on-going business (Burgelman, 1984, Jennings and Lumpkin, 1989) and to create new business (Guth and Ginsberg, 1990, Schendel, 1990, Zahra, 1996). CE has been considered as a strategy of the established firms to survive in competition (Guth and Ginsberg, 1990, Covin and Slevin, 1991, Ireland et al., 2009, Özdemirci, 2011, Peltola, 2012).

The CE concept can also be explained by its characteristics or dimensions. Miller (1983) shifted the view about entrepreneurship from an individual effort to the company's efforts suggested an entrepreneurial company must actively produce innovation (innovativeness), take a bold action to conduct risky business (risk taking), and become a pioneer in the market to outperform its competitors (proactiveness).

Lumpkin and Dess (1996) added two new dimensions to these three dimensions: competitive aggressiveness and autonomy. Competitive aggressiveness is closely related to proactiveness and complements it. Proactiveness refers to efforts to seize opportunities, whilst competitive aggressiveness is concerned with dealing with competitors to get an opportunity. In the

context of CE, autonomy means freedom and independence that are provided to staff to carry out entrepreneurial activities (Lumpkin et al., 2009). This independence is critical for fostering an entrepreneurial value within an entrepreneurial company. These five dimensions of CE are adopted in this study because of their comprehensiveness and conceptual clarity.

In construction management, the entrepreneurship research was mostly limited to the individual level and focused on personal characteristics of an entrepreneur (Abdul-Aziz and Wong, 2010, Sidek and Zainol, 2011, Jaafar et al., 2014). There is little evidence of CE in construction management research so far although the five dimensions of CE have been investigated individually. For instance, research efforts are found on innovativeness in construction or risk taking in construction. However, previous research in construction focused mostly on risk management instead of risk taking, and competitive advantage instead of competitive aggressiveness. Likewise, autonomy and proactiveness terminologies are not directly used in construction research. Autonomy concept is generally referred as and associated with control mechanism and empowerment. Proactiveness is associated with key words: positioning, strategy and dynamic capabilities. The research efforts associated with each CE dimension is presented below.

Autonomy

Autonomy is defined philosophically in a personal context as free and independent individual action to make a decision as intended. In the organizational context, autonomy is usually interpreted as autonomy of employees within the boundaries of a company's rules and culture (Roloff and Aßländer, 2010). Autonomy of employees involves autonomy to work independently, autonomy to make a decision, autonomy to set their own goals, autonomy to negotiate, freedom to access information, freedom to communicate, and freedom to undertake business opportunity (Covin and Slevin, 1989, Hughes and Morgan, 2007, Tsai et

al., 2008, Roloff and Aßländer, 2010).

Autonomy style may differ depending on the type, style, size, culture and ownership of the company. For example, organization size and ownership effect the level of centralization and delegation, which influence how autonomy is provided to the staff (Lumpkin and Dess, 2001).

In construction management research, autonomy concept has been addressed as control mechanisms or empowerment. Control is directed to ensure every action, behaviour and outcome will meet organizational or project aims. Self-control and empowerment was found to positively influence job performance (Tuuli and Rowlinson, 2009). Alazzaz and Whyte (2015) also identified these characteristics have a positive impact on the construction productivity due to its influence on resource development, process improvement, and worker involvement.

Competitive aggressiveness

Competitive aggressiveness has been considered as a company's efforts to outperform its competitors directly and vigorously and is characterized by reactions or responses to competitors' action as well as exploiting the strength of the company compared to its competitors (Helfat, 1997, Lumpkin and Dess, 2001). A competitive aggressive company will continuously assess the condition of its competitors, and identify their weaknesses in order to feature its own strength and hopefully resulting in more opportunities for obtaining commercial advantage (Hughes and Morgan, 2007).

Competitive aggressiveness has been translated into several practical areas, such as aggressive price competitions, introducing innovative products that outperform competitors' products, haunting the competitors in the market, bringing special surprises to the market

(Tsai et al., 2008, Hussain et al., 2015). An effective competitive strategy in leadership, contract management and health and safety is critical for a construction company in order to outperform competitors and to survive in the highly competitive era of globalization (Orozco et al., 2014).

Innovativeness

Innovativeness is interpreted as an effort to gather and to support the invention of creative new products, services and processes (Lumpkin and Dess, 2001, Hughes and Morgan, 2007). Product innovativeness is defined as a propensity to introduce innovative product characterised by properties such as newness, uniqueness, pioneering, and technology adoption (Liu and Chen, 2015, Tsai et al., 2015). Service and process innovativeness was introduced in order to provide customer satisfaction, meet customers' needs and to improve the firm's value at an acceptable risk (Dotzel et al., 2013).

Winch (2000) addressed innovativeness as the extent to which the construction company designed its organization to support the creation of innovation which is necessary to excel in competition. Innovativeness has been linked to competitive advantage of a construction company as a result of gained benefits such as decrease in the construction cost, increase in productivity, and eventually improving reputation (Lim et al., 2010, Gambatese and Hallowell, 2011). In order to be innovative, contractors need to have a behaviour that supports the creation of innovation (Lai et al., 2016).

Proactiveness

Proactiveness has been characterized by behaviour that is proactive rather than reactive and more relevant to exploration rather than exploitation (Helfat, 1997, Lumpkin and Dess, 2001). A proactive company is characterised by continuously monitoring the development of

the business environment, taking action prior to its competitors, and never waiting for the emergence of external demands (Hughes and Morgan, 2007).

In order to survive in the increasingly challenging competitive business environment, contractors need to understand well the dynamic changes in the construction market.

Identifying challenges sent out by external forces and improving the internal strength of the company in order to seek a business opportunity are the essential components of a strategy to achieve sustainable growth (Korkmaz and Messner, 2008). Contractor's proactive approach mostly remains limited to expanding into new markets, specifically entering to international market to deal with construction market change (Han et al., 2010), to avoid domestic market recession (Jung et al., 2010) and to counter the domestic business cycle (Abdul-Aziz and Wong, 2010).

Risk taking

Risk taking is characterised by a tendency to take bold actions under uncertain condition with uncertain results, in order to achieve the expected results (Lumpkin and Dess, 2001, Hughes and Morgan, 2007). Miller (1983), Covin and Slevin (1989), and Lumpkin et al. (2009), found risk taking decisions were usually intended to get high returns. Bold actions for taking risks can be addressed by several high risk activities such as venturing, entering unknown new markets and committing to utilize a large portion of the company's resources with uncertain outcomes (Lumpkin and Dess, 2001).

Contractors' risk attitude has been considered as an important aspect of contractors' competitive success for survival and growth. Business diversification is one of contractors' strategies for survival and growth, which requires bold action to take risks (Kim and Reinschmidt, 2011). The following factors were found to influence risk taking behaviour of contractors: experience, costs estimates, condition of contract, financial condition, need for

projects (Wong and Hui, 2006), owner personality (Acar and Göç, 2011), decision making consequences, experience, and availability of project information (Wang and Yuan, 2011).

Although CE is considered as an important strategy for contractors, there is very little research effort directed towards entrepreneurship for contractors. This study focuses on bridging this gap in research. Attention on the particular circumstances of the construction industry in Indonesia will characterise this study, because the data is gathered from, and based upon, the experiences of contractors in Indonesia.

Indonesian Construction Industry

The construction industry in Indonesia has been growing rapidly and encouraging Indonesia's economic growth in the last few years. The gross domestic product (GDP) of the construction sector provides a significant contribution to the total GDP of Indonesia and this contribution has increased from year to year. <Figure 1 shows the GDP of the construction sector from 2010 to 2015 according to the data from the Bureau of Indonesian Statistics.

<Figure 1 near here>

The competition in the Indonesian construction market is very high. The number of local contractors that are identified by the Bureau of Indonesian Statistics was extremely large with about 130,000 local contractors in 2015. In addition, the force of global free trade creates increasingly higher and harsher competition. Based on the data from the Information System of Directorate General of Construction Development Agency, at the moment 340 foreign contractors have been registered in Indonesia (LPJK,2017). This number shows a significant increase compared to only 128 in 2011. The opportunities for the foreign contractors mostly exist due to the unpreparedness of Indonesian contractors to excel in business competition and their low performance. Wirahadikusumah and Pribadi (2011)

found the majority of the contractors in Indonesia are small businesses that have only poor to fair performance.

Large numbers of small contractors with poor performance leads to various other problems in the Indonesian construction industry, such as:

- Collusion and unfair competition (Suraji et al., 2007)
- Low competitiveness because of failure to develop relevant strategies in running their business or lack of capability to compete with foreign contractors (Soeparto et al., 2007, Sudarto et al., 2008a, Budiwibowo et al., 2009).
- Business orientation that focused on short term benefit rather than long term business sustainability (Soeparto et al., 2007)
- Failure to focus on a particular market and tendency to work on any project they can secure (Budiwibowo et al., 2009)

This situation has resulted in an uncondusive business environment in the Indonesian construction industry. This is further aggravated by factors outside the industry. Examples to these external factors affecting the performance of the construction industry in Indonesia include high interest rate charged on loans, little support from financial institutions, unequitable competition, and unpredictable business conditions (Sudarto et al., 2008b).

In order to address the complex issues faced by most contractors in Indonesia, an appropriate corporate strategy is needed urgently. The experiences of companies in several industries clearly show the influence of CE on the success of their businesses (Covin and Slevin 1991, Zahra, 1993, Lumpkin and Dess 1996, Ireland et al. 2009,Özdemirci 2011, and Mohamad et

al. 2011). Considering the type of problems contractors in Indonesia experience, CE could be a solution.

Research methods

Due to lack of previous research in the area, an exploratory approach was found necessary to investigate the implementation of CE by contractors and to identify the key factors for successful CE. Exploratory research is defined as a broad, intentional, and systematic data collection designed to maximize discovery of generalizations based on description and direct understanding of an area of social or psychological life (Given, 2008). Exploratory research is sometimes referred to as a grounded theory approach to qualitative research. It is necessary to be flexible during data collection to include any new angle that comes to light and continuously assess the findings (Moen and Middelthon, 2015). Therefore, rigidly structured surveys and interviews are not appropriate for data collection.

Data collection

The important issue in selecting a sample for qualitative research is not the sample size but rather on how to choose the right people who will be able to provide the necessary information correctly (Creswell, 2003, Silverman, 2011). This study adopted a judgmental sampling technique that determines the criteria for potential participants by considering the capacity of participant to provide proper information that is relevant to the issues under investigation (Quinlan, 2011).

Top managers of local contractors were chosen to be interviewed due to their intensive involvement in planning, developing and implementing regulations, policies and programs of the company. They have significant knowledge on the condition of their company and hold

strategic information is in their hands. The selection criteria included working at the minimum position of general manager or equivalent and having an experience of at least 15 years in the construction industry.

In addition to the personal criteria, the organizational criteria were also considered for choosing the right interviewees. It was ensured that the sample included companies from different size classes (based on number of employees) and different types of ownership (private and state).

Face to face semi-structured interviews were conducted with top managers of contractors in Indonesia for three months to gather their ideas on the implementation of CE in running their business. Face to face interview was chosen due to its effectiveness in finding out someone's ideas. They are also straight forward, flexible, adaptable and controllable (Saunders et al., 2012).

The interview consisted of two sections. The first section aimed to obtain information on the background of the interviewee that consisted the respondent's current position, working experience in construction, number of permanent employees and type of company ownership. The second section aimed to explore the implementation of CE in contractors. It consisted of 27 questions over five subsections, aligned with the five dimensions of corporate entrepreneurship: autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness. The interviews were audio-recorded and then transcribed before data analysis. This study includes interviews with 19 top level managers of 18 contractors in Indonesia. There were two interviewees in one of the organizations. The profile of interviewees and the companies can be seen in <Table 1.

<Table 1 near here >

Data Analysis

A 'bottom up' approach thematic analysis was carried out to analyse the data and identify the key factors of CE. Thematic analysis is defined as "a method for identifying, analysing and reporting patterns (themes) within data" (Braun and Clarke, 2006). The data analysis consisted of four main stages:

1. The analysis started by reading the transcript twice, which enabled the researcher to be familiar with the data and to catch initial ideas from the data.
2. Second step was the initial coding stage. Coding is 'the process whereby data are broken down into component parts which are given names' (Bryman and Bell, 2011). Coding was carried out manually by examining the transcript carefully line by line. Sentences and paragraphs that indicated a potential pattern of key factors were highlighted manually. In this stage, the researcher coded as many phenomena as possible that emerged from the interviews.
3. The next step was refining the coding process and re-categorising the codes into appropriate nodes using NVivo 10 software. Nodes in thematic analysis are considered as themes which are used as key factors of CE in this study. In this stage, an initial list of key factors was generated across the data set, and the provisional name and flexible definition for each key factor started to be created.
4. Refining the coding process, re-collating the codes into appropriate themes and reviewing the name and definition of each theme were continuously done to check whether the factors work in relation to the entire data set or not. This stage was done in three rounds using NVivo 10 software. In each round, new themes have been found and

some existing themes have been dropped, combined, re-named and re-defined. Finally, the list of key factors of CE for contractors was identified.

Figure 2 provides an example of the re-collation of the codes under a theme, which later led to the identification of the key factor named ‘acting as problem solver for clients’ (KF5). The example, which was generated using Nvivo software, lists all statements that are related to how contractors got involved in client’s problems and what they did to solve these problems. Clients are generally inexperienced or ignorant of the issues related to construction, so contractors need to provide useful information for the clients to increase their benefits by, for example, explaining the building design, or guiding them in the selection of building materials. In addition, clients sometimes face problems such as tax issues and delayed or missed payments. In these cases, contractors end up suggesting solutions for finding alternative resources of fund or giving ideas for investment. Regardless of the source of the problems, contractors chose to get involved in solving the client’s problem as it would have a direct or indirect effect on themselves. Based on these findings, this indicator was named ‘acting as problem solver for clients’ and defined as ‘helping clients to seek the best way to solve client’s problems such as technical, financial or other problems’. Using the same process, all key factors for CE for contracting companies were identified.

<Figure 2 near here>

Validation

Validation is concerned with the trustworthiness of the finding (Silverman, 2011); and hence is important for assessing the quality of the research findings. Expert review is one of the ways to validate the finding of research by asking the opinions, suggestions, and comments from experts (Angkananon et al., 2013). Based on the inputs from experts, the findings can be evaluated and refined (Meng et al., 2011).

Ten academics were used as subject matter experts to review the key factors of CE, because they have broad and deep insight on the subject under study but they are not considered as prospective respondents of the study. The experts were chosen from academics with industry experience, and research and teaching background in construction management area who have worked in Indonesian universities for more than 15 years'. The profile of the experts are shown in Table 2. During the interviews, each key factor was discussed comprehensively. Based on the inputs of the experts, the key factors were refined and finalised. These key factors are presented in the following section.

<Table 2 near here>

Key factors of CE for contractors

In the initial stage of analysis, 36 themes were identified. Then by refining the coding, recollating the codes and reviewing the name of each key factor, dropping or combining some of the key factors 21 themes were identified as the key factors of CE for contractors.

Validation of the key factors resulted in small changes in the definition of these key factors to enable a clearer explanation of the factors. The final 21 key factors (KF1 to KF21) of CE for contractors are explained below.

KF1 Autonomy for accessing information: independent action by an individual or team to access information, data and knowledge that is related to their duties, responsibilities and position.

This autonomy is regulated based on the position and duties of each staff; for example, a project manager can access all information related to the project under his or her control while a field manager can only access information related to technical matters in his or her

project. Autonomy to access information has been supported by the information system that is developed by each contractor.

KF2 Autonomy for communication: independent action by an individual or team to communicate both vertically and horizontally through both formal and informal forums

Formal communication is made through meetings which are scheduled monthly or bi-monthly. Informal communication, on the other hand, can be made at any time to provide input, to give and receive information, or to discuss a problem. Both can be carried out either vertically between each staff at different levels or horizontally between each staff at the same level.

KF3 Autonomy for proposing suggestions that benefit the projects and company:

independent action of staff both as an individual staff or a representative of a team to propose useful suggestions for the improvement of projects and company's performance

Staff feel free to propose an opportunity to get new projects, innovations, or new business opportunities. The proposal is taken to higher levels in stages from the supervisor up to the top management; for example, from project staff to project manager, and then to the top management of the company.

KF4 Autonomy in planning and managing projects: independent action by a project team to plan and manage projects in terms of procurement, interaction with clients, construction methods, human resources management, etc.

The examples of this autonomy are the autonomy to determine construction methods, equipment, sub-contractors, and also to manage project's financial and human resources. In planning and managing a project, the project team should follow provisions that have been specified in the corporate plan. There are other limitations in the implementation of this

autonomy; for instance, when it relates to the decisions that have substantial cost consequences, the project team should discuss the matter with management.

KF5 Acting as problem solver for clients: helping clients to seek the best way to solve client's problems such as technical, financial or other problems.

Clients are generally ignorant of the issues related to construction, so contractors need to provide useful information for the clients to increase their benefits by, for example, explanation of a building design, or guiding them in the selection of building materials. In addition, clients sometimes face problems related to tax issues, payments due, etc. In these cases, contractors are required to help their clients to find the best solutions.

KF6 Being different compared with competitors: the company is able to offer something different from its competitors through specialisation in particular projects, such as irrigation, hotels, airports etc., as well as innovation, such as construction methods, materials, etc.

Having qualified human resources, an established financial condition, advanced equipment, reliable technology and expertise in particular projects are considered as the advantages of contractors to be superior compared with their competitors. High commitment to serve clients, such as after maintenance period service, is another important point to win the competition.

KF7 Building and maintaining client confidence in the company's trustworthiness and reliability: the company is trusted by clients for its reliability and honesty, such as making continuous improvement, being fully committed, not cheating, etc.

Client confidence is the key for the contractor to get repeat orders from previous clients. Repeat orders are considered by almost all contractors as a major source of projects. Client confidence can be built and maintained through clients' satisfaction with the contractor's

performance in previous projects. Always meeting project specifications, having commitment to complete the project even if having loss, and continuously improving the performance to complete the projects are some examples of contractor efforts to convince clients.

KF8 Maintaining relationship with clients: the company keeps in touch with clients to establish long term relationship with the main aim of getting repeat orders

Maintaining good relationships with existing clients is usually done by the marketing department. Good relationship with existing clients must be initiated from the client's trust to the contractor; then, this relationship can be developed and maintained.

KF9 Positioning on markets that are concerned about quality: the company promises better quality rather than cheaper price compared to its competitors; therefore, it does not worry to be abandoned by a client simply because it offers a relatively higher price.

Contractors do not get involved in 'price war' competition where other contractors lower the bid price to an unreasonable price in order to obtain the project. One respondent declared that they do not worry about being regarded as an expensive contractor because they have loyal clients who are more concerned about quality than price.

KF10 Carrying out research and development activities: conducting experiments to create new products and/or services to achieve the efficiency and effectiveness of projects and to meet clients' demands

Large contractors usually have a Research and Development Department to handle these activities with the support of all staff. Small and medium-sized contractors usually do not have this department; therefore, the innovations are developed by the people in a project.

Companies usually support this activity as far as the budget is acceptable and the results can be accounted for.

KF11 Challenging staff to be innovative: a willingness to encourage staff to create innovation through an appropriate rewards system

Contractor challenges each staff to be innovative by providing some remuneration, such as bonus, profit sharing, and points for promotion. In addition, there are contractors that regularly hold formal competitions for innovation among the project teams. Each project is required to produce an innovation; then, the promising innovation is trialled in several projects and finally it is set as a company standard.

KF12 Supporting programs that spark innovation: a willingness to spark innovation through some programs, such as hiring experts, staff training, knowledge sharing, knowledge management, etc.

Besides those programs, determining the target of each project, the exemplar of top management behaviour and financial support are also considered as important factors to create innovations.

KF13 Carrying out marketing activities: actively carrying out marketing activities, particularly to obtain information about new projects and then proactively pursuing the project

Most contractors consider their marketing division as the second important division after the project division. Large contractors usually have a marketing department, whilst small and medium contractors assign this to some employees and expect them to carry out marketing activities together with their project activities. However, marketing is the task of every staff in the company; therefore, all staff required to support marketing activities. Marketing

activity for contractors is different from other businesses. Contractors have the opportunity to get the project only when the project is offered by the client; therefore, they cannot use the marketing approach for direct selling. The most appropriate marketing approach for a contractor was considered to be obtaining information about projects availability and then approaching the owner by proactive actions, such as sending company profile and doing a presentation.

KF14 Expanding market segment: looking for opportunities to get projects in new segments and new areas

Contractors should not focus on a certain segment of the market, for example developer, government or private sector only, but they should put diversity into different markets. In addition, expanding market segment into new areas is also another concern of contractors but most contractors prefer focusing on the domestic market only due to the problems resulting from cultural and regulatory differences in the overseas projects

KF15 Looking ahead to future demands: being able to anticipate future demands and trends, such as ISO (International Organization for Standardization) certification, Green Contractor Certification, global competition, etc.

Anticipating future demand is an important factor for contractors to maintain sustainability of their business. Looking ahead, contractors must be prepared to enter global competition. For example, one of the contractors in this research had begun to prepare their employees to deal with international work culture. Likewise, rapid progress of construction methods that are driven by the increase of customer demands should be anticipated in advance.

KF16 Running business diversification: looking for business opportunities and developing new businesses in the areas that are still related to the core business of the contractor

This factor is also referred to as the principle of 'do not put all eggs in one basket' in running the business. Most contractors expand their business to the areas related to construction such as: property development, pre-cast concrete, construction equipment, and building materials. Since the demand for business diversification is very important, contractors provide an opportunity for all staff to propose new business opportunities based on their experience.

KF17 Risk Taking for Innovation: bold actions that have been reckoned carefully to introduce innovation, such as new construction methods, new materials, etc.

Contractors in this study stated that they are willing to take a risk for innovation as far as the proposed innovations are reasonable. They realized that innovation has a risk but they also realized that innovation is required to achieve the efficiency and effectiveness of projects and to meet customers' demands. However, anticipated actions have been carried out in order to minimise the risks, such as developing innovation gradually starting from the simplest one with the lowest cost.

KF18 Risk taking for selecting clients: bold actions that have been reckoned carefully to take a project from new clients who have never had any experience of cooperating

In running a business, a contractor also faces a risk that comes from the clients, such as late payment or failure to pay, unreasonable requests, etc. These risks will increase for the projects from new clients. In this situation, the contractor should not decline to take projects from new clients. However, some precautions such as looking for information about the client's background, assessing the current financial condition of the client and conducting internal coordination to evaluate the feasibility of the client could be done to minimize the risk to an acceptable level.

KF19 Risk taking on the financial aspects of projects: bold actions that have been reckoned carefully to accept any projects with financial risks.

Problems of client payment, un-stable economic conditions, changes in material prices, etc. have been identified as a project's financial risk. Some anticipative actions to reduce financial risk have been identified, such as cooperating with other contractors, dividing a contract for a large project into several sub-contracts, working as efficiently as possible and including cost of risk in the bid price.

KF20 Risk taking on the social aspects of projects: bold actions that have been reckoned carefully to accept any projects with social risks.

Disturbance on the neighbourhood of the construction site and hence possible conflict with the community due to issues such as traffic disturbance and noise issues are considered as the social risks of a project. To reduce social risks, some precautions must be taken, such as evaluating and minimising all possible impacts of the project on the environment and community around the project, as well as recruiting local community members in the project site or engaging with local businesses.

KF21 Risk taking on the technical aspects of projects: bold actions that have been reckoned carefully to accept any projects with technical risks, such as construction method, site condition, lack of resources, etc.

Contractors are required to carry out some strategic actions to address project's technical risks, such as assigning an experienced project manager to projects with a high technical risk, outsourcing a third party to carry out the difficult work, gathering each staff's ideas to solve the technical problems, as well as carrying out innovation.

Considering five dimensions of CE that have been adopted to explore the implementation of CE for contractors, the 21 key factors are categorized under five dimensions. Grouping of these key factors is shown in <Table 3.

<Table 3 near here>

Relationship among the key factors

After identification of key factors, the interview data was re-analysed to investigate the relationships among the key factors, to understand them better and to find out how they contribute to the CE of contractors. The analysis was done using coding density function in NVivo 10 software. For this purpose, firstly all codes that had been coded in more than one node were determined in NVivo . This enabled the researchers to develop concept maps and identify whether there is a relationship among these nodes. All dependencies and relationships found during this process are presented in Table 3. The relationships were defined as one- way or associative. Associative direction indicates an affiliate relationship where two nodes are held both ways but do not affect each other, while one-way relationship demonstrates the relationship where one leaves an impact on the other in a definite direction (Bazeley and Jackson, 2013). No two-way relationships were identified among CE key factors.

<Figure 3 presents the relationships among the key factors of corporate entrepreneurship in Indonesian contracting companies. As seen in the figure, there is a series of one-way relationships among key factors 5, 7, 9 and 6: Contractor effort to help clients to solve the problem (KF5) will build its image as a trusty and reliable contractor (KF7). This positive image gives a chance to the contractor to position itself in a market that is more concerned about quality than price (KF9); therefore, the contractor will not engage in unfair competition

by lowering price to an unreasonable level in order to get a project. In this particular case, the contractor will be considered different compared to the competitors (KF6).

An example to associative relationship can be seen among key factors 18, 19 and 14. Taking a project from a new client (KF18) and expanding market segment (KF14), both bring a financial risk to the contractor (KF 19). The client brings financial risk such as late payment, failure to pay, an unreasonable request, etc. Venturing into new and unknown markets also brings financial risks such as a project over budget due to lack of material, low quality of worker, etc. Therefore, when a contractor takes a project from a new client or expands market, it takes bold action on financial risk as well.

<Figure 3 near here>

Discussion of findings

The 21 key factors found in this study are reflecting the unique characteristics of contractors' business in Indonesia. These findings were found from the experiences of contractors, therefore they are influenced by particular circumstances of Indonesian contractors in running their business. Although the 21 key factors are considered to be applicable to contractors in many different countries, KF9, KF15, KF18 and KF19 are considered specific to Indonesian industry due to the heavy influence of Indonesia specific circumstances which are discussed below.

1. Sustainable business is not a concern of many contractors in Indonesia and their business orientation is still on short-term profit (Sudarto et al., 2007). This condition triggers 'price war' competition, where contractors lower the bid price to an unreasonable price in order to obtain the project; unrealistic pricing has become an issue in contractor business in Indonesia. This particular business situation encouraged the contractors that

participated in this study to raise the issue of positioning on markets that are concerned about quality (KF9).

2. The Indonesian contractors doing projects overseas are fewer in number than foreign contractors coming to Indonesia (Widjajanto et al., 2011). It's due to lack of ability to compete in the global market place (Larasati ZR and Tsunemi, 2009). In this particular situation, looking ahead to future demands (KF15) with special emphasis on certifications that are recognized globally, such as ISO, green contractors, etc. gets special attention.
3. The main building materials are still dependent on imported products, therefore the unstable exchange rate of Indonesian currency increases contractors' financial risk. This issue was highlighted by all interviewees during the data collection stage. In this particular circumstance, contractors are required to take a bold action to take on projects with financial risk (KF19).
4. Lacking legal protection in all aspects is a fundamental issue in Indonesia. In construction, legal disputes between contractors and clients potentially become a big issue without proper solution. However contractors are still expected to take risks for selecting clients (KF18).

When all relations among key factors were examined, it was found that autonomy for communication (KF2) is the key factor that most widely supports other key factors. It supports 7 key factors (KF3, KF4, KF12, KF13, KF18, KF19, KF21) and has associative relationship with KF1 as explained below.

Autonomy for communication (KF2) supports autonomy for proposing suggestions that benefit the projects and company (KF3). Without autonomy for communication, staff cannot

share their idea with the higher level managers to improve the performance of project and company. Autonomy for communication supports autonomy in planning and managing a project (KF4). Even though the project team has autonomy to plan and to manage the project independently, they still need to communicate their plan intensively to head office's team. For example, the determination of methods, materials, equipment, etc. must be adapted to the existing sources in the company. Autonomy for communication supports programs that spark innovation (KF12) because autonomy for communication provides an opportunity for staff to share their ideas and knowledge as well as problems with other staffs, and then through this communication, innovation can be generated. Carrying out marketing activities (KF13) is supported by autonomy for communication because this autonomy gives staff a chance to convey information about new projects that are available in the market. Autonomy for communication (KF2) has a positive impact on the contractor's risk taking to select clients (KF18) as well as risk taking on financial aspects of the projects (KF19) and risk taking on technical aspects of the project (KF21). When staff has autonomy for communication, they have the chance to provide relevant information with respect to the clients that they know. As a result, the company's top management will feel more confident to take a risk to select the client. Likewise, the staff can convey their opinion about the potential problems that will occur in the project; therefore, the risk of project losses and project technical problem can be anticipated before the decision is made.

In addition to the one-way relationships with seven key factors, autonomy for communication (KF2) is also associated with autonomy for accessing information (KF1). In this relationship, they are linked but do not influence one another. Usually when people communicate each other, they also share information; and hence, autonomy for communication and autonomy for accessing information can happen concurrently. Another reason is the facility, such as information system, is available to support both of them.

When the five dimensions were investigated, the autonomy in contractors was found to be associated with freedom and independence provided to the staff, especially to those directly involved in the project. Autonomy mainly focuses on a chance for staff to deliver ideas, to share knowledge, and to convey information in order to support other activities such as selecting the client, marketing, and business diversification. When considering the relationship among the five dimensions of CE, it was found that autonomy is the dimension which most widely supports and has strong influence on other dimensions. Autonomy supports contractors to be innovative, proactive and risk taker. This finding is supported by Lumpkin et al. (2009), which considered autonomy as the main factor to foster an entrepreneurial value within an entrepreneurial company.

Contractor's competitive aggressiveness is shown through various attempts to approach the client and to build trust as the project is based on client's order. This strategy supports contractors' expectation to get projects from existing clients' repeat orders as well as projects from new clients as a result of word of mouth.

When relationships among factors and among the five dimensions are investigated, it is seen that competitive aggressiveness has the least amount of relationship with other dimensions. It is not linked to autonomy and risk taking. However, when the overall picture of relationship is examined, it is found that both proactiveness and innovativeness, which are related to competitive aggressiveness, have relationships with autonomy and risk taking. Therefore, competitive aggressiveness has indirect relationship with autonomy and risk taking.

Innovativeness of contractors is mainly triggered by project's needs to meet customers' demands and to build projects effectively and efficiently. In this particular case, innovation is expected to be generated from project; therefore, the contractor needs to encourage and to challenge the project team to bring out innovation through their experience being involved in

project activities. This finding is supported by Kwofie et al. (2015) that mentioned that the project team has an important role to meet clients' demands.

Contractors' proactiveness is focused on an effort to find projects through appropriate marketing activities. Another effort for getting a project is through anticipative action for future demand of project, client and construction industry. Marketing activities in a contractor are focused on obtaining information about a new project in the market and then persuading the owner in order to get the project. Anticipation of future demand is carried out through some actions such as generating innovation, pursuing international certifications or adopting advanced information technologies and associated working culture (such as Building Information Modelling and collaborative processes). Expanding market segment is another proactive strategy to seek projects from new markets such as a new area or a new group of clients.

In addition to focusing on project as a main business, contractor's proactiveness should also be directed towards business diversification in order to survive in high competition.

However, it was found that contractor's interest in developing new business remains in the domain of construction industry such as property developer, construction material, and construction equipment.

A contractor is required to carry out bold actions to take project with all risks such as financial risk, technical risk and social risk as well as risk that came from new clients. Taking risk associated to innovation is another strategy to get projects. Although critical for CE; bold action to take a risk must be accompanied by careful consideration of the risk before the final decision is made and plans to minimize this risk.

Conclusions

This research investigated the implementation of corporate entrepreneurship specific to contractors in Indonesia. The concept of corporate entrepreneurship is very new in construction industry and there is not enough guidance available to the companies. Therefore, the main contribution of this research is to provide a better understanding of how contractors can benefit from CE in their business challenges. Analysis of data collected from Indonesian contractors resulted in 21 key factors of CE which were categorised under five dimensions of CE that have been adopted in this study: autonomy, competitive aggressiveness, innovativeness, proactiveness and risk taking.

The key factors found in this study are considered as unique and have not been identified before. They are closely associated with the clients and project activities of contractors that are in accordance with the business circumstances of contractors. These factors and the relationships between them reflect the project based and high risk nature of the contracting business in Indonesia and contribute to the main body of knowledge in CE providing a specific case of CE for contractors in Indonesia. However, apart from the four key factors (KF9, KF15, KF18 and KF19) which are discussed to be heavily informed by circumstances very specific to Indonesia, all key factors of corporate entrepreneurship could be generalised and used as a guide for carrying out studies in other countries after minor modifications for local conditions.

In order to develop an effective corporate strategy, contractors need to understand their current condition and capability. The 21 key factors identified in this study are critical as they can be used as indicators for the organizational capability assessment for contractors and help them to develop the corporate strategy of their company.

The CE key factors are linked to one another; hence, an entrepreneurial contractor project based firms cannot apply these key factors individually. They need to be implemented in an integrated way in order to achieve CE and business success.

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Key factors for successful corporate entrepreneurship: a study of Indonesian contractors

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Key factors for successful corporate entrepreneurship: a study of Indonesian contractors

Corporate entrepreneurship (CE) is considered as an effective means to support the success of business in a competitive market. Although CE can be a solution for contractors to come up with the right corporate strategy, the concept of CE is very new and there is very little guidance. This paper is aimed at clarifying the CE concept for contractors and identifying key factors for CE in order to enable the implementation. To address this, firstly theoretical concepts and previous research on CE were explored, followed by 19 interviews with top managers of contractors in Indonesia. The data was analysed using thematic analysis to identify the key factors for successful CE in Indonesian contracting business. 21 key factors of CE have been identified, which are discussed under five categories: autonomy, competitive aggressiveness, innovativeness, proactiveness and risk taking. All these key factors are found to be related to one another and hence have to be managed as a system for successful CE.

Keywords: entrepreneurship, corporate strategy, contractors, Indonesia

Introduction

The construction industry plays a major role in driving a country's social and economic establishment (Halpin and Woodhead, 2011, Wong et al., 2010, Winch, 2010), which is more significant in rapidly developing countries such as Indonesia. The construction industry involves many different types of companies such as contractors, sub-contractors, consultants and suppliers. Among these, contractors run their activities in many unique ways. Firstly, contractors are project based firms (PBFs) that deliver a unique end product specifically designed to meet the client's needs. Secondly, they need to overcome two main challenges in order to be successful in contractors' business: 1) to beat the competition to get the project and, 2) to deliver the project successfully (Volpe and Volpe, 1991). Contractors operate in an environment of high competition, high risk, and high need for innovation (Dvir et al., 2006, Schaufelberger, 2009). They tend to apply a prudent and conventional management style in their business; however, in order to achieve long term success, contractors need to implement

1 the right strategic concept, which may involve novelty and innovation (Chinowsky, 2001).

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3 Problems in the Indonesian construction industry arise due to the unpreparedness of the
4 construction companies, especially contractors, to deal with current conditions and future
5 prospects. According to Wirahadikusumah and Pribadi (2011), the majority of Indonesian
6 contractors display only poor to fair performance, and only few contractors are considered
7 excellent, delivering high standards and quality of work in their projects. Considering the
8 specific nature and challenge of the contractor business in general coupled with the particular
9 circumstances of construction industry in Indonesia, a strategic effort needs to be made by the
10 contractors in order to improve their competitiveness and performance. Efforts to deal with
11 the competitiveness might include building effective networks (Keung and Shen, 2017);
12 forming collaborative and partnering relationships with subcontractors (Tan, Xue and
13 Cheung, 2017); building work and bidding experience (Fu, Drew, and Lo, 2002); or
14 corporate entrepreneurship which covers the previous efforts as well (Peltola, 2012). This
15 study focuses on corporate entrepreneurship and its implementation in contracting companies
16 as an effective way to deal with these challenges.
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38 Entrepreneurship is accepted as an important driving force for business success (Covin and
39 Slevin, 1991, Lumpkin and Dess, 1996, Wiklund and Shepherd, 2003). Entrepreneurship is
40 associated to the process that has been carried out by an individual (entrepreneur) whilst
41 setting up a new company (Bolton and Thomson, 2004, Brandstatter, 2011) as well as the
42 strategic process of maintaining the existing company (Lazear, 2005, Yalcin and Kapu,
43 2008). The latter is referred as corporate entrepreneurship (CE), which is the focus of this
44 study. Considering the reliability of CE in supporting the success of business and the need of
45 Indonesian contractors to implement the right strategy to counter the high levels of
46 competition, it is expected that CE will enable contracting businesses to achieve success.
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1 Although there is a large amount of research on CE in business management, it is also
2 accepted that the theoretical models and solutions are not transferrable to all business sectors
3
4 (van Wyk and Adonisi, 2012). In construction research, the efforts heavily focus on
5
6 entrepreneurship at the individual level (entrepreneurs) and fail to address the corporate
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8 entrepreneurship. This study focuses on this gap in construction research. Furthermore, the
9
10 special characteristics of the contracting business and the specific conditions of Indonesian
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12 construction industry call for a specific CE research that reflects the business and country
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14 characteristics. To address this, firstly theoretical concepts and previous research on CE in
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16 business management and in construction industry were explored. Secondly, interviews were
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18 carried out to explore the implementation of CE in Indonesian contractors. Thirdly, the data
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20 was analysed systematically to identify the key factors for successful CE in Indonesian
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22 contracting business. Thirdly, the data
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24 was analysed systematically to identify the key factors for successful CE in Indonesian
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26 contracting business.
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31 **Literature review**

32 *33 Entrepreneurship*

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37 Past definitions associated entrepreneurship with creating new business (Yalcin and Kapu,
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39 2008); or maintaining existing business (Jones and Butler, 1992, Lazear, 2005); or both
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41 (Hebert and Link, 1989, Sharma and Chrisman, 1999, Lumpkin and Dess, 1996, Bolton and
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43 Thompson, 2004). Characteristics attributed to the entrepreneurship process were seeking
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45 opportunity (Jones and Butler, 1992), risk (Hebert and Link, 1989), creativity (Hebert and
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47 Link, 1989, Jones and Butler, 1992, Bolton and Thompson, 2004, Brandstätter, 2011) and
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49 innovation or newness (Lumpkin and Dess, 1996, Sharma and Chrisman, 1999, Lazear, 2005,
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51 Brandstätter, 2011). These characteristics were investigated as part of the process that has
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53 been carried out by an individual, entrepreneur (Hebert and Link, 1989, Sharma and
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55 Chrisman, 1999, Bolton and Thompson, 2004, Brandstätter, 2011) as well as the process
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1 within a company referred as corporate entrepreneurship (Jones and Butler, 1992, Lumpkin
2 and Dess, 1996, Lazear, 2005, Yalcin and Kapu, 2008).

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5 This study considers entrepreneurship as a process of an individual creating and / or running
6 a business as well as the process within the company of attempting to gain new business and
7 / or to manage the existing business with the aim to achieve business success that involves
8 several specific characteristics, such as seeking opportunity, risk taking, creativity, and
9 innovation.

10 11 12 13 14 15 16 17 18 19 ***Corporate Entrepreneurship***

20 CE is defined as an entrepreneurial activity or process within an existing organization to
21 upgrade on-going business (Burgelman, 1984, Jennings and Lumpkin, 1989) and to create
22 new business (Guth and Ginsberg, 1990, Schendel, 1990, Zahra, 1996). CE has been
23 considered as a strategy of the established firms to survive in competition (Guth and
24 Ginsberg, 1990, Covin and Slevin, 1991, Ireland et al., 2009, Özdemirci, 2011, Peltola,
25 2012).

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39 The CE concept can also be explained by its characteristics or dimensions. Miller (1983)
40 shifted the view about entrepreneurship from an individual effort to the company's efforts
41 suggested an entrepreneurial company must actively produce innovation (innovativeness),
42 take a bold action to conduct risky business (risk taking), and become a pioneer in the market
43 to outperform its competitors (proactiveness).

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1 context of CE, autonomy means freedom and independence that are provided to staff to carry
2 out entrepreneurial activities (Lumpkin et al., 2009). This independence is critical for
3
4 fostering an entrepreneurial value within an entrepreneurial company. These five dimensions
5
6 of CE are adopted in this study because of their comprehensiveness and conceptual clarity.
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10 In construction management, the entrepreneurship research was mostly limited to the
11
12 individual level and focused on personal characteristics of an entrepreneur (Abdul-Aziz and
13
14 Wong, 2010, Sidek and Zainol, 2011, Jaafar et al., 2014). There is little evidence of CE in
15
16 construction management research so far although the five dimensions of CE have been
17
18 investigated individually. For instance, research efforts are found on innovativeness in
19
20 construction or risk taking in construction. However, previous research in construction
21
22 focused mostly on risk management instead of risk taking, and competitive advantage instead
23
24 of competitive aggressiveness. Likewise, autonomy and proactiveness terminologies are not
25
26 directly used in construction research. Autonomy concept is generally referred as and
27
28 associated with control mechanism and empowerment. Proactiveness is associated with key
29
30 words: positioning, strategy and dynamic capabilities. The research efforts associated with
31
32 each CE dimension is presented below.
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41 *Autonomy*

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44 Autonomy is defined philosophically in a personal context as free and independent individual
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46 action to make a decision as intended. In the organizational context, autonomy is usually
47
48 interpreted as autonomy of employees within the boundaries of a company's rules and
49
50 culture (Roloff and Aßländer, 2010). Autonomy of employees involves autonomy to work
51
52 independently, autonomy to make a decision, autonomy to set their own goals, autonomy to
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54 negotiate, freedom to access information, freedom to communicate, and freedom to
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56 undertake business opportunity (Covin and Slevin, 1989, Hughes and Morgan, 2007, Tsai et
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al., 2008, Roloff and Abländer, 2010).

Autonomy style may differ depending on the type, style, size, culture and ownership of the company. For example, organization size and ownership effect the level of centralization and delegation, which influence how autonomy is provided to the staff (Lumpkin and Dess, 2001).

In construction management research, autonomy concept has been addressed as control mechanisms or empowerment. Control is directed to ensure every action, behaviour and outcome will meet organizational or project aims. Self-control and empowerment was found to positively influence job performance (Tuuli and Rowlinson, 2009). Alazzaz and Whyte (2015) also identified these characteristics have a positive impact on the construction productivity due to its influence on resource development, process improvement, and worker involvement.

Competitive aggressiveness

Competitive aggressiveness has been considered as a company's efforts to outperform its competitors directly and vigorously and is characterized by reactions or responses to competitors' action as well as exploiting the strength of the company compared to its competitors (Helfat, 1997, Lumpkin and Dess, 2001). A competitive aggressive company will continuously assess the condition of its competitors, and identify their weaknesses in order to feature its own strength and hopefully resulting in more opportunities for obtaining commercial advantage (Hughes and Morgan, 2007).

Competitive aggressiveness has been translated into several practical areas, such as aggressive price competitions, introducing innovative products that outperform competitors' products, haunting the competitors in the market, bringing special surprises to the market

1 (Tsai et al., 2008, Hussain et al., 2015). An effective competitive strategy in leadership,
2 contract management and health and safety is critical for a construction company in order
3
4 outperform competitors and to survive in the highly competitive era of globalization(Orozco
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6
7 et al., 2014).

10 *Innovativeness*

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14 Innovativeness is interpreted as an effort to gather and to support the invention of creative
15
16 new products, services and processes (Lumpkin and Dess, 2001, Hughes and Morgan, 2007).

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19 Product innovativeness is defined as a propensity to introduce innovative product
20
21 characterised by properties such as newness, uniqueness, pioneering, and technology
22
23 adoption (Liu and Chen, 2015, Tsai et al., 2015). Service and process innovativeness was
24
25 introduced in order to provide customer satisfaction, meet customers' needs and to improve
26
27 the firm's value at an acceptable risk (Dotzel et al., 2013).

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32 Winch (2000) addressed innovativeness as the extent to which the construction company
33
34 designed its organization to support the creation of innovation which is necessary to excel in
35
36 competition. Innovativeness has been linked to competitive advantage of a construction
37
38 company as a result of gained benefits such as decrease in the construction cost, increase in
39
40 productivity, and eventually improving reputation (Lim et al., 2010, Gambatese and
41
42 Hallowell, 2011). In order to be innovative, contractors need to have a behaviour that
43
44 supports the creation of innovation (Lai et al., 2016).

47 48 49 *Proactiveness*

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54 Proactiveness has been characterized by behaviour that is proactive rather than reactive and
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56 more relevant to exploration rather than exploitation (Helfat, 1997, Lumpkin and Dess,
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58 2001). A proactive company is characterised by continuously monitoring the development of
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1 the business environment, taking action prior to its competitors, and never waiting for the
2 emergence of external demands (Hughes and Morgan, 2007).
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5 In order to survive in the increasingly challenging competitive business environment,
6 contractors need to understand well the dynamic changes in the construction market.
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9 Identifying challenges sent out by external forces and improving the internal strength of the
10 company in order to seek a business opportunity are the essential components of a strategy to
11 achieve sustainable growth (Korkmaz and Messner, 2008). Contractor's proactive approach
12 mostly remains limited to expanding into new markets, specifically entering to international
13 market to deal with construction market change (Han et al., 2010), to avoid domestic market
14 recession (Jung et al., 2010) and to counter the domestic business cycle (Abdul-Aziz and
15 Wong, 2010).
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28 *Risk taking*

29 Risk taking is characterised by a tendency to take bold actions under uncertain condition with
30 uncertain results, in order to achieve the expected results (Lumpkin and Dess, 2001, Hughes
31 and Morgan, 2007). Miller (1983), Covin and Slevin (1989), and Lumpkin et al. (2009),
32 found risk taking decisions were usually intended to get high returns. Bold actions for taking
33 risks can be addressed by several high risk activities such as venturing, entering unknown
34 new markets and committing to utilize a large portion of the company's resources with
35 uncertain outcomes (Lumpkin and Dess, 2001).
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50 Contractors' risk attitude has been considered as an important aspect of contractors'
51 competitive success for survival and growth. Business diversification is one of contractors'
52 strategies for survival and growth, which requires bold action to take risks (Kim and
53 Reinschmidt, 2011). The following factors were found to influence risk taking behaviour of
54 contractors: experience, costs estimates, condition of contract, financial condition, need for
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1 projects (Wong and Hui, 2006), owner personality (Acar and Göç, 2011), decision making
2 consequences, experience, and availability of project information (Wang and Yuan, 2011).
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5 Although CE is considered as an important strategy for contractors, there is very little
6 research effort directed towards entrepreneurship for contractors. This study focuses on
7 bridging this gap in research. Attention on the particular circumstances of the construction
8 industry in Indonesia will characterise this study, because the data is gathered from, and
9 based upon, the experiences of contractors in Indonesia.
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18 ***Indonesian Construction Industry*** 19

20 The construction industry in Indonesia has been growing rapidly and encouraging
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The competition in the Indonesian construction market is very high. The number of local
contractors that are identified by the Bureau of Indonesian Statistics was extremely large
with about 130,000 local contractors in 2015. In addition, the force of global free trade
creates increasingly higher and harsher competition. Based on the data from the Information
System of Directorate General of Construction Development Agency, at the moment 340
foreign contractors have been registered in Indonesia (LPJK,2017). This number shows a
significant increase compared to only 128 in 2011. The opportunities for the foreign
contractors mostly exist due to the unpreparedness of Indonesian contractors to excel in
business competition and their low performance. Wirahadikusumah and Pribadi (2011)

1 found the majority of the contractors in Indonesia are small businesses that have only poor to
2 fair performance.
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5 Large numbers of small contractors with poor performance leads to various other problems in
6 the Indonesian construction industry, such as:
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11 • Collusion and unfair competition (Suraji et al., 2007)
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15 • Low competitiveness because of failure to develop relevant strategies in running their
16 business or lack of capability to compete with foreign contractors (Soeparto et al., 2007,
17 Sudarto et al., 2008a, Budiwibowo et al., 2009).
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21 • Business orientation that focused on short term benefit rather than long term business
22 sustainability (Soeparto et al., 2007)
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26 • Failure to focus on a particular market and tendency to work on any project they can
27 secure (Budiwibowo et al., 2009)
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36 This situation has resulted in an uncondusive business environment in the Indonesian
37 construction industry. This is further aggravated by factors outside the industry. Examples to
38 these external factors affecting the performance of the construction industry in Indonesia
39 include high interest rate charged on loans, little support from financial institutions,
40 unequitable competition, and unpredictable business conditions (Sudarto et al., 2008b).
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49 In order to address the complex issues faced by most contractors in Indonesia, an appropriate
50 corporate strategy is needed urgently. The experiences of companies in several industries
51 clearly show the influence of CE on the success of their businesses (Covin and Slevin 1991,
52 Zahra, 1993, Lumpkin and Dess 1996, Ireland et al. 2009,Özdemirci 2011, and Mohamad et
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3 al. 2011). Considering the type of problems contractors in Indonesia experience, CE could be
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8 a solution.

9 **Research methods**

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12 Due to lack of previous research in the area, an exploratory approach was found necessary to
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14 investigate the implementation of CE by contractors and to identify the key factors for
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16 successful CE. Exploratory research is defined as a broad, intentional, and systematic data
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18 collection designed to maximize discovery of generalizations based on description and direct
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20 understanding of an area of social or psychological life (Given, 2008). Exploratory research
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22 is sometimes referred to as a grounded theory approach to qualitative research. It is necessary
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24 to be flexible during data collection to include any new angle that comes to light and
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26 continuously assess the findings (Moen and Middelthon, 2015). Therefore, rigidly structured
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28 surveys and interviews are not appropriate for data collection.
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35 ***Data collection***

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38 The important issue in selecting a sample for qualitative research is not the sample size but
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40 rather on how to choose the right people who will be able to provide the necessary
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42 information correctly (Creswell, 2003, Silverman, 2011). This study adopted a judgmental
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44 sampling technique that determines the criteria for potential participants by considering the
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46 capacity of participant to provide proper information that is relevant to the issues under
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48 investigation (Quinlan, 2011).
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55 Top managers of local contractors were chosen to be interviewed due to their intensive
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57 involvement in planning, developing and implementing regulations, policies and programs of
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59 the company. They have significant knowledge on the condition of their company and hold
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1 strategic information is in their hands. The selection criteria included working at the
2 minimum position of general manager or equivalent and having an experience of at least 15
3 years in the construction industry.
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8 In addition to the personal criteria, the organizational criteria were also considered for
9 choosing the right interviewees. It was ensured that the sample included companies from
10 different size classes (based on number of employees) and different types of ownership
11 (private and state).
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19 Face to face semi-structured interviews were conducted with top managers of contractors in
20 Indonesia for three months to gather their ideas on the implementation of CE in running their
21 business. Face to face interview was chosen due to its effectiveness in finding out someone's
22 ideas. Face to face interview was chosen due to its effectiveness in finding out someone's
23 ideas. They are also straight forward, flexible, adaptable and controllable (Saunders et al.,
24 2012).
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32 The interview consisted of two sections. The first section aimed to obtain information on the
33 background of the interviewee that consisted the respondent's current position, working
34 experience in construction, number of permanent employees and type of company
35 ownership. The second section aimed to explore the implementation of CE in contractors. It
36 consisted of 27 questions over five subsections, aligned with the five dimensions of corporate
37 entrepreneurship: autonomy, innovativeness, risk taking, proactiveness, and competitive
38 aggressiveness. The interviews were audio-recorded and then transcribed before data
39 analysis. This study includes interviews with 19 top level managers of 18 contractors in
40 Indonesia. There were two interviewees in one of the organizations. The profile of
41 interviewees and the companies can be seen in <Table 1.
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Data Analysis

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3 A 'bottom up' approach thematic analysis was carried out to analyse the data and identify the
4 key factors of CE. Thematic analysis is defined as "a method for identifying, analysing and
5 reporting patterns (themes) within data" (Braun and Clarke, 2006). The data analysis
6 consisted of four main stages:
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14 1. The analysis started by reading the transcript twice, which enabled the researcher to be
15 familiar with the data and to catch initial ideas from the data.
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- 20 2. Second step was the initial coding stage. Coding is 'the process whereby data are broken
21 down into component parts which are given names' (Bryman and Bell, 2011). Coding
22 was carried out manually by examining the transcript carefully line by line. Sentences
23 and paragraphs that indicated a potential pattern of key factors were highlighted
24 manually. In this stage, the researcher coded as many phenomena as possible that
25 emerged from the interviews.
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- 35 3. The next step was refining the coding process and re-categorising the codes into
36 appropriate nodes using NVivo 10 software. Nodes in thematic analysis are considered
37 as themes which are used as key factors of CE in this study. In this stage, an initial list of
38 key factors was generated across the data set, and the provisional name and flexible
39 definition for each key factor started to be created.
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- 49 4. Refining the coding process, re-collating the codes into appropriate themes and
50 reviewing the name and definition of each theme were continuously done to check
51 whether the factors work in relation to the entire data set or not. This stage was done in
52 three rounds using NVivo 10 software. In each round, new themes have been found and
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1 some existing themes have been dropped, combined, re-named and re-defined. Finally,
2 the list of key factors of CE for contractors was identified.
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6 Figure 2 provides an example of the re-collation of the codes under a theme, which later led
7
8 to the identification of the key factor named ‘acting as problem solver for clients’ (KF5). The
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10 example, which was generated using Nvivo software, lists all statements that are related to
11
12 how contractors got involved in client’s problems and what they did to solve these problems.
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14 Clients are generally inexperienced or ignorant of the issues related to construction, so
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16 contractors need to provide useful information for the clients to increase their benefits by, for
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18 example, explaining the building design, or guiding them in the selection of building
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20 materials. In addition, clients sometimes face problems such as tax issues and delayed or
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22 missed payments. In these cases, contractors end up suggesting solutions for finding
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24 alternative resources of fund or giving ideas for investment. Regardless of the source of the
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26 problems, contractors chose to get involved in solving the client’s problem as it would have a
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28 direct or indirect effect on themselves. Based on these findings, this indicator was named
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30 ‘acting as problem solver for clients’ and defined as ‘helping clients to seek the best way to
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32 solve client’s problems such as technical, financial or other problems’. Using the same
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34 process, all key factors for CE for contracting companies were identified.
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46 ***Validation*** 47

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50 Validation is concerned with the trustworthiness of the finding (Silverman, 2011); and hence
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52 is important for assessing the quality of the research findings. Expert review is one of the
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54 ways to validate the finding of research by asking the opinions, suggestions, and comments
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56 from experts (Angkananon et al., 2013). Based on the inputs from experts, the findings can
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58 be evaluated and refined (Meng et al., 2011).
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1 Ten academics were used as subject matter experts to review the key factors of CE, because
2 they have broad and deep insight on the subject under study but they are not considered as
3 prospective respondents of the study. The experts were chosen from academics with industry
4 experience, and research and teaching background in construction management area who
5 have worked in Indonesian universities for more than 15 years'. The profile of the experts are
6 shown in Table 2. During the interviews, each key factor was discussed comprehensively.
7 Based on the inputs of the experts, the key factors were refined and finalised. These key
8 factors are presented in the following section.

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24 **Key factors of CE for contractors**

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27 In the initial stage of analysis, 36 themes were identified. Then by refining the coding, re-
28 collating the codes and reviewing the name of each key factor, dropping or combining some
29 of the key factors 21 themes were identified as the key factors of CE for contractors.
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33 Validation of the key factors resulted in small changes in the definition of these key factors
34 to enable a clearer explanation of the factors. The final 21 key factors (KF1 to KF21) of CE
35 for contractors are explained below.
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43 **KF1 Autonomy for accessing information:** independent action by an individual or team to
44 access information, data and knowledge that is related to their duties, responsibilities and
45 position.
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51 This autonomy is regulated based on the position and duties of each staff; for example, a
52 project manager can access all information related to the project under his or her control
53 while a field manager can only access information related to technical matters in his or her
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1 project. Autonomy to access information has been supported by the information system that
2 is developed by each contractor.
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5 **KF2 Autonomy for communication:** independent action by an individual or team to
6 communicate both vertically and horizontally through both formal and informal forums
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11 Formal communication is madethrough meetings which are scheduled monthly or bi-
12 monthly. Informal communication, on the other hand, can be made at any time to provide
13 input, to give and receive information, or to discuss a problem. Both can be carried out either
14 vertically between each staff at different levels or horizontally between each staff at the same
15 level.
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25 **KF3 Autonomy for proposing suggestions that benefit the projects and company:**

26 independent action of staff both as an individual staff or a representative of a team to propose
27 useful suggestions for the improvement of projects and company's performance
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33 Staff feel free to propose an opportunity to get new projects, innovations, or new business
34 opportunities. The proposal is taken to higher levels in stages from the supervisor up to the
35 top management; for example, from project staff to project manager, and then to the top
36 management of the company.
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44 **KF4 Autonomy in planning and managing projects:** independent action by a project team
45 to plan and manage projects in terms of procurement, interaction with clients, construction
46 methods, human resources management, etc.
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52 The examples of this autonomy are the autonomy to determine construction methods,
53 equipment, sub-contractors, and also to manage project's financial and human resources. In
54 planning and managing a project, the project team should follow provisions that have been
55 specified in the corporate plan. There are other limitations in the implementation of this
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autonomy; for instance, when it relates to the decisions that have substantial cost consequences, the project team should discuss the matter with management.

KF5 Acting as problem solver for clients: helping clients to seek the best way to solve client's problems such as technical, financial or other problems.

Clients are generally ignorant of the issues related to construction, so contractors need to provide useful information for the clients to increase their benefits by, for example, explanation of a building design, or guiding them in the selection of building materials. In addition, clients sometimes face problems related to tax issues, payments due, etc. In these cases, contractors are required to help their clients to find the best solutions.

KF6 Being different compared with competitors: the company is able to offer something different from its competitors through specialisation in particular projects, such as irrigation, hotels, airports etc., as well as innovation, such as construction methods, materials, etc.

Having qualified human resources, an established financial condition, advanced equipment, reliable technology and expertise in particular projects are considered as the advantages of contractors to be superior compared with their competitors. High commitment to serve clients, such as after maintenance period service, is another important point to win the competition.

KF7 Building and maintaining client confidence in the company's trustworthiness and reliability: the company is trusted by clients for its reliability and honesty, such as making continuous improvement, being fully committed, not cheating, etc.

Client confidence is the key for the contractor to get repeat orders from previous clients.

Repeat orders are considered by almost all contractors as a major source of projects. Client confidence can be built and maintained through clients' satisfaction with the contractor's

1 performance in previous projects. Always meeting project specifications, having
2 commitment to complete the project even if having loss, and continuously improving the
3 performance to complete the projects are some examples of contractor efforts to convince
4 clients.
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10 **KF8 Maintaining relationship with clients:** the company keeps in touch with clients to
11 establish long term relationship with the main aim of getting repeat orders
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14 Maintaining good relationships with existing clients is usually done by the marketing
15 department. Good relationship with existing clients must be initiated from the client's trust to
16 the contractor; then, this relationship can be developed and maintained.
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24 **KF9 Positioning on markets that are concerned about quality:** the company promises
25 better quality rather than cheaper price compared to its competitors; therefore, it does not
26 worry to be abandoned by a client simply because it offers a relatively higher price.
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33 Contractors do not get involved in 'price war' competition where other contractors lower the
34 bid price to an unreasonable price in order to obtain the project. One respondent declared that
35 they do not worry about being regarded as an expensive contractor because they have loyal
36 clients who are more concerned about quality than price.
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44 **KF10 Carrying out research and development activities:** conducting experiments to
45 create new products and/or services to achieve the efficiency and effectiveness of projects
46 and to meet clients' demands
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52 Large contractors usually have a Research and Development Department to handle these
53 activities with the support of all staff. Small and medium-sized contractors usually do not
54 have this department; therefore, the innovations are developed by the people in a project.
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1 Companies usually support this activity as far as the budget is acceptable and the results can
2 be accounted for.
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5 **KF11 Challenging staff to be innovative:** a willingness to encourage staff to create
6 innovation through an appropriate rewards system
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10 Contractor challenges each staff to be innovative by providing some remuneration, such as
11 bonus, profit sharing, and points for promotion. In addition, there are contractors that
12 regularly hold formal competitions for innovation among the project teams. Each project is
13 required to produce an innovation; then, the promising innovation is trialled in several
14 projects and finally it is set as a company standard.
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24 **KF12 Supporting programs that spark innovation:** a willingness to spark innovation
25 through some programs, such as hiring experts, staff training, knowledge sharing, knowledge
26 management, etc.
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32 Besides those programs, determining the target of each project, the exemplar of top
33 management behaviour and financial support are also considered as important factors to
34 create innovations.
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41 **KF13 Carrying out marketing activities:** actively carrying out marketing activities,
42 particularly to obtain information about new projects and then proactively pursuing the
43 project
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49 Most contractors consider their marketing division as the second important division after the
50 project division. Large contractors usually have a marketing department, whilst small and
51 medium contractors assign this to some employees and expect them to carry out marketing
52 activities together with their project activities. However, marketing is the task of every staff
53 in the company; therefore, all staff required to support marketing activities. Marketing
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1 activity for contractors is different from other businesses. Contractors have the opportunity to
2 get the project only when the project is offered by the client; therefore, they cannot use the
3 marketing approach for direct selling. The most appropriate marketing approach for a
4 contractor was considered to be obtaining information about projects availability and then
5 approaching the owner by proactive actions, such as sending company profile and doing a
6 presentation.
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14 **KF14 Expanding market segment:** looking for opportunities to get projects in new
15 segments and new areas
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18 Contractors should not focus on a certain segment of the market, for example developer,
19 government or private sector only, but they should put diversity into different markets. In
20 addition, expanding market segment into new areas is also another concern of contractors but
21 most contractors prefer focusing on the domestic market only due to the problems resulting
22 from cultural and regulatory differences in the overseas projects
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34 **KF15 Looking ahead to future demands:** being able to anticipate future demands and
35 trends, such as ISO (International Organization for Standardization) certification, Green
36 Contractor Certification, global competition, etc.
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43 Anticipating future demand is an important factor for contractors to maintain sustainability of
44 their business. Looking ahead, contractors must be prepared to enter global competition. For
45 example, one of the contractors in this research had begun to prepare their employees to deal
46 with international work culture. Likewise, rapid progress of construction methods that are
47 driven by the increase of customer demands should be anticipated in advance.
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56 **KF16 Running business diversification:** looking for business opportunities and developing
57 new businesses in the areas that are still related to the core business of the contractor
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1 This factor is also referred to as the principle of 'do not put all eggs in one basket' in running
2 the business. Most contractors expand their business to the areas related to construction such
3 as: property development, pre-cast concrete, construction equipment, and building materials.
4
5 Since the demand for business diversification is very important, contractors provide an
6
7 opportunity for all staff to propose new business opportunities based on their experience.
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12 **KF17 Risk Taking for Innovation:** bold actions that have been reckoned carefully to
13 introduce innovation, such as new construction methods, new materials, etc.
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18 Contractors in this study stated that they are willing to take a risk for innovation as far as the
19 proposed innovations are reasonable. They realized that innovation has a risk but they also
20 realized that innovation is required to achieve the efficiency and effectiveness of projects and
21 to meet customers' demands. However, anticipated actions have been carried out in order to
22 minimise the risks, such as developing innovation gradually starting from the simplest one
23 with the lowest cost.
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28 **KF18 Risk taking for selecting clients:** bold actions that have been reckoned carefully to
29 take a project from new clients who have never had any experience of cooperating
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34 In running a business, a contractor also faces a risk that comes from the clients, such as late
35 payment or failure to pay, unreasonable requests, etc. These risks will increase for the
36 projects from new clients. In this situation, the contractor should not decline to take projects
37 from new clients. However, some precautions such as looking for information about the
38 client's background, assessing the current financial condition of the client and conducting
39 internal coordination to evaluate the feasibility of the client could be done to minimize the
40 risk to an acceptable level.
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KF19 Risk taking on the financial aspects of projects: bold actions that have been reckoned carefully to accept any projects with financial risks.

Problems of client payment, un-stable economic conditions, changes in material prices, etc. have been identified as a project's financial risk. Some anticipative actions to reduce financial risk have been identified, such as cooperating with other contractors, dividing a contract for a large project into several sub-contracts, working as efficiently as possible and including cost of risk in the bid price.

KF20 Risk taking on the social aspects of projects: bold actions that have been reckoned carefully to accept any projects with social risks.

Disturbance on the neighbourhood of the construction site and hence possible conflict with the community due to issues such as traffic disturbance and noise issues are considered as the social risks of a project. To reduce social risks, some precautions must be taken, such as evaluating and minimising all possible impacts of the project on the environment and community around the project, as well as recruiting local community members in the project site or engaging with local businesses.

KF21 Risk taking on the technical aspects of projects: bold actions that have been reckoned carefully to accept any projects with technical risks, such as construction method, site condition, lack of resources, etc.

Contractors are required to carry out some strategic actions to address project's technical risks, such as assigning an experienced project manager to projects with a high technical risk, outsourcing a third party to carry out the difficult work, gathering each staff's ideas to solve the technical problems, as well as carrying out innovation.

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Considering five dimensions of CE that have been adopted to explore the implementation of CE for contractors, the 21 key factors are categorized under five dimensions. Grouping of these key factors is shown in <Table 3.

<Table 3 near here>

Relationship among the key factors

After identification of key factors, the interview data was re-analysed to investigate the relationships among the key factors, to understand them better and to find out how they contribute to the CE of contractors. The analysis was done using coding density function in NVivo 10 software. For this purpose, firstly all codes that had been coded in more than one node were determined in NVivo . This enabled the researchers to develop concept maps and identify whether there is a relationship among these nodes. All dependencies and relationships found during this process are presented in Table 3. The relationships were defined as one- way or associative. Associative direction indicates an affiliate relationship where two nodes are held both ways but do not affect each other, while one-way relationship demonstrates the relationship where one leaves an impact on the other in a definite direction (Bazeley and Jackson, 2013). No two-way relationships were identified among CE key factors.

<Figure 3 presents the relationships among the key factors of corporate entrepreneurship in Indonesian contracting companies. As seen in the figure, there is a series of one-way relationships among key factors 5, 7, 9 and 6: Contractor effort to help clients to solve the problem (KF5) will build its image as a trusty and reliable contractor (KF7). This positive image gives a chance to the contractor to position itself in a market that is more concerned about quality than price (KF9); therefore, the contractor will not engage in unfair competition

1 by lowering price to an unreasonable level in order to get a project. In this particular case, the
2 contractor will be considered different compared to the competitors (KF6).
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5 An example to associative relationship can be seen among key factors 18, 19 and 14. Taking
6 a project from a new client (KF18) and expanding market segment (KF14), both bring a
7 financial risk to the contractor (KF 19). The client brings financial risk such as late payment,
8 failure to pay, an unreasonable request, etc. Venturing into new and unknown markets also
9 brings financial risks such as a project over budget due to lack of material, low quality of
10 worker, etc. Therefore, when a contractor takes a project from a new client or expands
11 market, it takes bold action on financial risk as well.
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22 <Figure 3 near here>
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24 25 26 27 **Discussion of findings**

28 The 21 key factors found in this study are reflecting the unique characteristics of contractors'
29 business in Indonesia. These findings were found from the experiences of contractors,
30 therefore they are influenced by particular circumstances of Indonesian contractors in
31 running their business. Although the 21 key factors are considered to be applicable to
32 contractors in many different countries, KF9, KF15, KF18 and KF19 are considered specific
33 to Indonesian industry due to the heavy influence of Indonesia specific circumstances which
34 are discussed below.
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- 49 1. Sustainable business is not a concern of many contractors in Indonesia and their business
50 orientation is still on short-term profit (Sudarto et al., 2007). This condition triggers
51 'price war' competition, where contractors lower the bid price to an unreasonable price in
52 order to obtain the project; unrealistic pricing has become an issue in contractor business
53 in Indonesia. This particular business situation encouraged the contractors that
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1 participated in this study to raise the issue of positioning on markets that are concerned
2 about quality (KF9).
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6 2. The Indonesian contractors doing projects overseas are fewer in number than foreign
7 contractors coming to Indonesia (Widjajanto et al., 2011). It's due to lack of ability to
8 compete in the global market place (Larasati ZR and Tsunemi, 2009). In this particular
9 situation, looking ahead to future demands (KF15) with special emphasis on
10 certifications that are recognized globally, such as ISO, green contractors, etc. gets
11 special attention.
12
13 3. The main building materials are still dependent on imported products, therefore the
14 unstable exchange rate of Indonesian currency increases contractors' financial risk. This
15 issue was highlighted by all interviewees during the data collection stage. In this
16 particular circumstance, contractors are required to take a bold action to take on projects
17 with financial risk (KF19).
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19 4. Lacking legal protection in all aspects is a fundamental issue in Indonesia. In
20 construction, legal disputes between contractors and clients potentially become a big
21 issue without proper solution. However contractors are still expected to take risks for
22 selecting clients (KF18).
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45 When all relations among key factors were examined, it was found that autonomy for
46 communication (KF2) is the key factor that most widely supports other key factors. It
47 supports 7 key factors (KF3, KF4, KF12, KF13, KF18, KF19, KF21) and has associative
48 relationship with KF1 as explained below.
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56 Autonomy for communication (KF2) supports autonomy for proposing suggestions that
57 benefit the projects and company (KF3). Without autonomy for communication, staff cannot
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1 share their idea with the higher level managers to improve the performance of project and
2 company. Autonomy for communication supports autonomy in planning and managing a
3 project (KF4). Even though the project team has autonomy to plan and to manage the project
4 independently, they still need to communicate their plan intensively to head office's team.
5
6 For example, the determination of methods, materials, equipment, etc. must be adapted to the
7 existing sources in the company. Autonomy for communication supports programs that spark
8 innovation (KF12) because autonomy for communication provides an opportunity for staff to
9 share their ideas and knowledge as well as problems with other staffs, and then through this
10 communication, innovation can be generated. Carrying out marketing activities (KF13) is
11 supported by autonomy for communication because this autonomy gives staff a chance to
12 convey information about new projects that are available in the market. Autonomy for
13 communication (KF2) has a positive impact on the contractor's risk taking to select clients
14 (KF18) as well as risk taking on financial aspects of the projects (KF19) and risk taking on
15 technical aspects of the project (KF21). When staff has autonomy for communication, they
16 have the chance to provide relevant information with respect to the clients that they know. As
17 a result, the company's top management will feel more confident to take a risk to select the
18 client. Likewise, the staff can convey their opinion about the potential problems that will
19 occur in the project; therefore, the risk of project losses and project technical problem can be
20 anticipated before the decision is made.
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47 In addition to the one-way relationships with seven key factors, autonomy for
48 communication (KF2) is also associated with autonomy for accessing information (KF1). In
49 this relationship, they are linked but do not influence one another. Usually when people
50 communicate each other, they also share information; and hence, autonomy for
51 communication and autonomy for accessing information can happen concurrently. Another
52 reason is the facility, such as information system, is available to support both of them.
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When the five dimensions were investigated, the autonomy in contractors was found to be associated with freedom and independence provided to the staff, especially to those directly involved in the project. Autonomy mainly focuses on a chance for staff to deliver ideas, to share knowledge, and to convey information in order to support other activities such as selecting the client, marketing, and business diversification. When considering the relationship among the five dimensions of CE, it was found that autonomy is the dimension which most widely supports and has strong influence on other dimensions. Autonomy supports contractors to be innovative, proactive and risk taker. This finding is supported by Lumpkin et al. (2009), which considered autonomy as the main factor to foster an entrepreneurial value within an entrepreneurial company.

Contractor's competitive aggressiveness is shown through various attempts to approach the client and to build trust as the project is based on client's order. This strategy supports contractors' expectation to get projects from existing clients' repeat orders as well as projects from new clients as a result of word of mouth.

When relationships among factors and among the five dimensions are investigated, it is seen that competitive aggressiveness has the least amount of relationship with other dimensions. It is not linked to autonomy and risk taking. However, when the overall picture of relationship is examined, it is found that both proactiveness and innovativeness, which are related to competitive aggressiveness, have relationships with autonomy and risk taking. Therefore, competitive aggressiveness has indirect relationship with autonomy and risk taking.

Innovativeness of contractors is mainly triggered by project's needs to meet customers' demands and to build projects effectively and efficiently. In this particular case, innovation is expected to be generated from project; therefore, the contractor needs to encourage and to challenge the project team to bring out innovation through their experience being involved in

1 project activities. This finding is supported by Kwofie et al. (2015) that mentioned that the
2 project team has an important role to meet clients' demands.
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5 Contractors' proactiveness is focused on an effort to find projects through appropriate
6 marketing activities. Another effort for getting a project is through anticipative action for
7 future demand of project, client and construction industry. Marketing activities in a
8 contractor are focused on obtaining information about a new project in the market and then
9 persuading the owner in order to get the project. Anticipation of future demand is carried out
10 through some actions such as generating innovation, pursuing international certifications or
11 adopting advanced information technologies and associated working culture (such as
12 Building Information Modelling and collaborative processes). Expanding market segment is
13 another proactive strategy to seek projects from new markets such as a new area or a new
14 group of clients.
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31 In addition to focusing on project as a main business, contractor's proactiveness should also
32 be directed towards business diversification in order to survive in high competition.
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34 However, it was found that contractor's interest in developing new business remains in the
35 domain of construction industry such as property developer, construction material, and
36 construction equipment.
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44 A contractor is required to carry out bold actions to take project with all risks such as
45 financial risk, technical risk and social risk as well as risk that came from new clients. Taking
46 risk associated to innovation is another strategy to get projects. Although critical for CE; bold
47 action to take a risk must be accompanied by careful consideration of the risk before the final
48 decision is made and plans to minimize this risk.
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58 **Conclusions**

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1 This research investigated the implementation of corporate entrepreneurship specific to
2 contractors in Indonesia. The concept of corporate entrepreneurship is very new in
3 construction industry and there is not enough guidance available to the companies. Therefore,
4 the main contribution of this research is to provide a better understanding of how contractors
5 can benefit from CE in their business challenges. Analysis of data collected from Indonesian
6 contractors resulted in 21 key factors of CE which were categorised under five dimensions of
7 CE that have been adopted in this study: autonomy, competitive aggressiveness,
8 innovativeness, proactiveness and risk taking.
9

10 The key factors found in this study are considered as unique and have not been identified
11 before. They are closely associated with the clients and project activities of contractors that
12 are in accordance with the business circumstances of contractors. These factors and the
13 relationships between them reflect the project based and high risk nature of the contracting
14 business in Indonesia and contribute to the main body of knowledge in CE providing a
15 specific case of CE for contractors in Indonesia. However, apart from the four key factors
16 (KF9, KF15, KF18 and KF19) which are discussed to be heavily informed by circumstances
17 very specific to Indonesia, all key factors of corporate entrepreneurship could be generalised
18 and used as a guide for carrying out studies in other countries after minor modifications for
19 local conditions.
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21 In order to develop an effective corporate strategy, contractors need to understand their
22 current condition and capability. The 21 key factors identified in this study are critical as they
23 can be used as indicators for the organizational capability assessment for contractors and help
24 them to develop the corporate strategy of their company.
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1 The CE key factors are linked to one another; hence, an entrepreneurial contractor project
2 based firms cannot apply these key factors individually. They need to be implemented in an
3 integrated way in order to achieve CE and business success.
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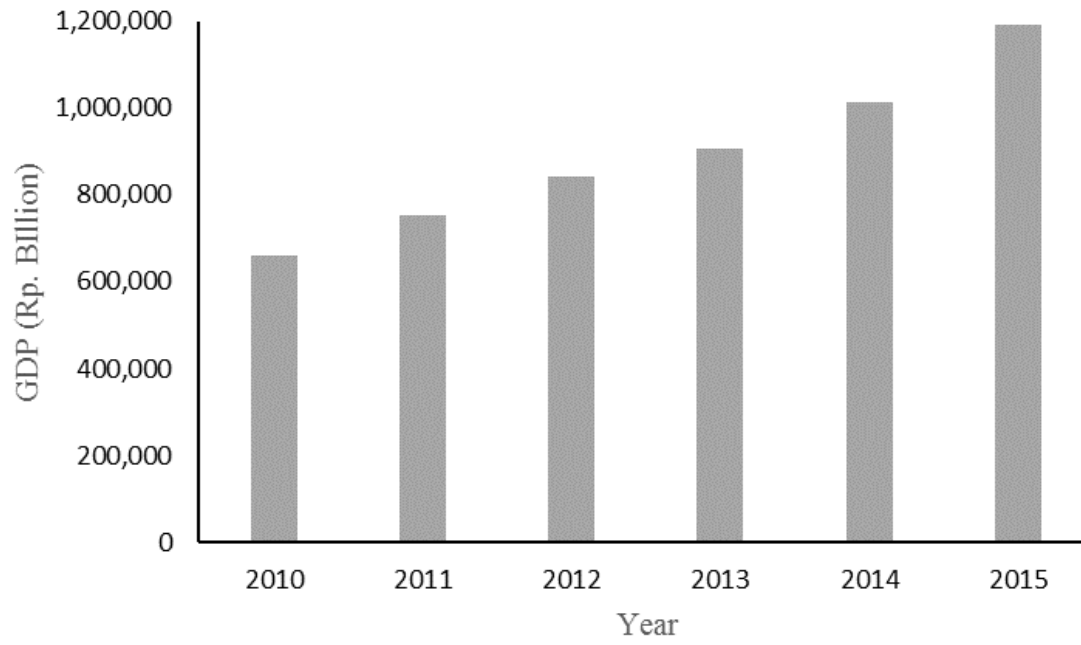


Figure 1 GDP of the construction sector in Indonesia (Bureau of Indonesian Statistics, 2016)

<p><u><Internals\Interview\CBM></u> - § 3 references coded [1.26% Coverage]</p> <p>Reference 1 - 0.18% Coverage</p> <p>We get involved in design and give input and advice to the owner</p> <p>Reference 2 - 0.50% Coverage</p> <p>We know where is a good location and where is not. Sometimes the land allotment, we also can suggest it to be changed. This land is not suitable for apartments but more suitable for hotel.</p> <p>Reference 3 - 0.57% Coverage</p> <p>We are open to the owner. I can say that in my view that this project is not good, if you build it then cannot sell it, you will lose money and then you can't pay me</p> <p><u><Internals\Interview\MRD></u> - § 1 reference coded [0.25% Coverage]</p> <p>Reference 1 - 0.25% Coverage</p> <p>We made the proposal for this project, the project should be built in this way and this is the budget</p> <p><u><Internals\Interview\NKR></u> - § 1 reference coded [1.27% Coverage]</p> <p>Reference 1 - 1.27% Coverage</p> <p>Owners don't want to get a headache, they want a project, they don't want to think - I want this house but I don't want to get a headache about design, construction, specification, please prepare it for me, if I agree, go on</p> <p><u><Internals\Interview\NRC></u> - § 1 reference coded [0.54% Coverage]</p> <p>Reference 1 - 0.54% Coverage</p> <p>We always sit together with the owner to discuss how to achieve the targets, such as cost, time, quality, and so on</p> <p><u><Internals\Interview\AKS></u> - § 1 reference coded [0.36% Coverage]</p> <p>Reference 1 - 0.36% Coverage</p> <p>We provide a lot of conveniences in process, in many ways</p> <p><u><Internals\Interview\TBPI></u> - § 3 references coded [9.44% Coverage]</p> <p>Reference 1 - 5.12% Coverage</p> <p>Starting to consider customers' complaints. Why our cost for formwork in BoQ is higher than the competitors. It's always risen. Then we started to think, we may need to invest, we calculated if we invest by ourselves it will be cheaper than we subcontract to other party, we can save up to 25%</p> <p>Reference 2 - 1.70% Coverage</p> <p>If there was a missed payment, we reminded them, then they paid. In cases of delays which are already more than 2 months, we contacted them and asked them about their problem, if they have a problem we asked them what we can do to help them. They told us about their problem and we offered them to consider that payment as a loan and they had to pay an interest. So far, no problem</p> <p>Reference 3 - 2.62% Coverage</p> <p>For three years, there is a tax regulation which annoys the client because client should pay double tax. In this situation we try to find the best solution to overcome this problem which is not detrimental to both parties</p> <p><u><Internals\Interview\EDS></u> - § 1 reference coded [0.91% Coverage]</p> <p>Reference 1 - 0.91% Coverage</p> <p>I more serve client, what is client's needs, what is client's goal. We tried to approach them</p> <p><u><Internals\Interview\GHB></u> - § 3 references coded [3.83% Coverage]</p> <p>Reference 1 - 1.49% Coverage</p> <p>Big projects, clients' money was not enough, they asked how to manage it. So, what can we do? For example, we invited bankers to cooperate with the clients</p> <p>Reference 2 - 1.07% Coverage</p> <p>Sometimes we shared, for example project of houses, I built the houses then I got some units. For example, (if there were) 5 houses, I got 2 and they got 3</p> <p>Reference 3 - 1.26% Coverage</p> <p>Finally, owner judged. It seems that I was more convincing to this contractor. We can provide more, can help more to predict what will happen, so we are more trusted.</p> <p><u><Internals\Interview\PKF></u> - § 1 reference coded [1.06% Coverage]</p> <p>Reference 1 - 1.06% Coverage</p> <p>We may have an idea that we can share- this one is better, more safe or secure. Sometimes they don't have enough experience. They forget about something important; not realize that their idea will be dangerous for other people.</p> <p><u><Internals\Interview\JKR></u> - § 2 references coded [1.79% Coverage]</p> <p>Reference 1 - 1.36% Coverage</p> <p>Service also means to address client's challenges. For example, building a sluice under a railway. This gave the Minister headache. We won the project we said: be calm, we will build it, then we presented our proposal and he agreed because it solved his problem.</p>

Figure 2: Example of theme generation using codes (KF5)

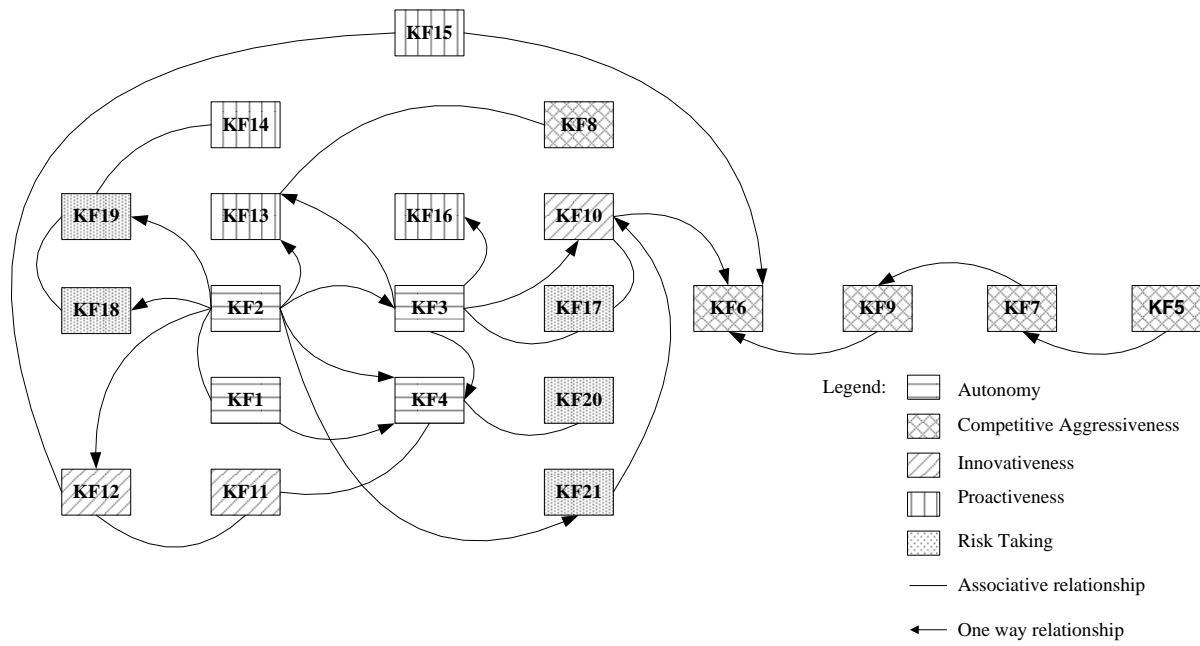


Figure 3 Relationships among Key Factors of Corporate Entrepreneurship for Contractors

Table 1 The profile of interviewees

No	Position	Working experience (years)	Number of employees	Ownership
1	President Director	22	>1000	Private
2	President Director	27	500 – 1000	Private
3	President Director	31	500 – 1000	Private
4	President Director	21	100 – 500	Private
5	Vice President Director	27	>1000	Private
6	Director	24	>1000	Private
7	Director	23	>1000	Private
8	Director	28	500 – 1000	Private
9	Director	21	100 – 500	Private
10	Director	21	100 – 500	Private
11	Director	18	<100	Private
12	Director	27	<100	Private
13	Director	11	<100	Private
14	General Manager	20	>1000	State
15	General Manager	15	100 – 500	State
16	Branch Manager	27	500 – 1000	Private
17	Branch Manager	23	<100	Private
18	Manager	18	500 – 1000	State
19	Corporate Secretary	26	>1000	State

Table 2 The profile of experts in validation

Experts	Current Position	Experience in Teaching (T) and Research (R) (years)	Major	Practical experience: Past	Practical experience: Current
Expert 1	Associate Professor	27 (T&R)	Construction Management	Site manager	Project consultant
Expert 2	Assistant Professor	28 (T&R)	Construction Management	Site manager	Project consultant
Expert 3	Assistant Professor	15 (T&R)	Construction Management	Project consultant	Project consultant
Expert 4	Senior Lecturer	20 (T&R)	Construction Management	Contractor employee	Director of Project Management company
Expert 5	Senior Lecturer	25 (T&R)	Construction Management	Project manager	Developer owner / Project consultancy
Expert 6	Senior Lecturer	20 (T&R)	Construction Management	Project manager	Contractor/ Project consultant
Expert 7	Professor	17(R)& 9(T)	Construction Management	Project consultant	Project consultant
Expert 8	Associate Professor	22 (T&R)	Construction Management	Project manager	Project consultant
Expert 9	Associate Professor	29 (T&R)	Civil Engineering	Site manager	Project consultant
Expert 10	Associate Professor	20 (T&R)	Construction Management	Project consultant	Project consultant

Table 3 Key Factors of Corporate Entrepreneurship for Contractors and their relationships

CODE	KEY FACTORS OF CE	TYPE OF RELATIONSHIP	RELATION WITH
AUTONOMY			
KF1	Autonomy for accessing information	Associative	KF2
		One way (→)	KF4
KF2	Autonomy for communication	Associative	KF1
		One way (→)	KF3
		One way (→)	KF4
		One way (→)	KF12
		One way (→)	KF13
		One way (→)	KF18
		One way (→)	KF19
		One way (→)	KF21
KF3	Autonomy for proposing suggestions that benefit the projects and company	One way (←)	KF2
		One way (→)	KF4
		One way (→)	KF10
		One way (→)	KF13
		One way (→)	KF16
		Associative	KF17
KF4	Autonomy in planning and managing projects	One way (←)	KF1
		One way (←)	KF2
		One way (←)	KF3
		Associative	KF11
		Associative	KF20
COMPETITIVE AGGRESSIVENESS			
KF5	Acting as problem solver for clients	One way (→)	KF7
KF6	Being different compared with competitors	One way (←)	KF9
		One way (←)	KF10
		One way (←)	KF15
KF7	Building and maintaining client confidence as trustworthy and reliable	One way (←)	KF5
		One way (→)	KF9
KF8	Maintaining relationship with clients	Associative	KF13
KF9	Positioning on a market that is concerned about quality	One way (→)	KF6
		One way (←)	KF7
INNOVATIVENESS			
KF10	Carrying out research and development activities	One way (←)	KF3
		One way (→)	KF6

		Associative	KF17
		One way (←)	KF21
KF11	Challenging staff to be innovative	Associative	KF4
		Associative	KF12
KF12	Supporting programs that spark innovation	One way (←)	KF2
		Associative	KF11
		Associative	KF15

PROACTIVENESS

KF13	Carrying out marketing activities	One way (←)	KF2
		One way (←)	KF3
		Associative	KF8
KF14	Expanding market segment	Associative	KF19
KF15	Looking ahead to the future demands	One way (→)	KF6
		Associative	KF12
KF16	Running business diversification	One way (←)	KF3

RISK TAKING

KF17	Risk taking for innovation	Associative	KF3
		Associative	KF10
KF18	Risk taking for selecting clients	One way (←)	KF2
		Associative	KF19
KF19	Risk taking on financial aspects of the projects	One way (←)	KF2
		Associative	KF14
		Associative	KF18
KF20	Risk taking on social aspects of the projects	Associative	KF4
KF21	Risk taking on technical aspects of the projects	One way (←)	KF2
		One way (→)	KF10
